

PUBLICATION 1 SERVICE DESCRIPTION FOR MARITIME CONNECT

1.1 Definition

Capitalized terms used and not otherwise defined in this Service Description will have the meanings ascribed to them in the Specific Conditions for Satellite Services or elsewhere in the Agreement. In the event of any conflict between the definitions provided in this Service Description and those provided elsewhere in the Agreement, the definitions in this Service Description will control for purposes of this Service Description.

“**ABS**” means the automatic beam switching technology that enables vessels to automatically switch to available satellites while the vessels are in transit.

“**ACM**” means Automatic Code Modulation.

“**CIR**” means Committed Information Rate.

“**D-TDMA**” means Deterministic-TDMA.

“**DVB-S2**” means Digital Video Broadcasting - Satellite - Second Generation.

“**In Route**” means the transmission of data from the Customer's remote Location to Customer's data network.

“**IP TDMA**” means Internet Protocol Time Division Multiple Access.

“**IVR**” means Interactive Voice Response.

“**Maritime Connect Equipment**” means the server, switch, and UTM software provided by Orange as CPE for use with the Service. For the avoidance of doubt, the Customer cannot provide the Maritime Connect Equipment for use with the Service.

“**Out route**” means the transmission of data from Customer's data network to the Customer's remote Location.

“**QoS**” means Quality of Service.

“**Satellite Equipment**” will have the meaning defined in the Specific Conditions for Satellite Services.

“**Service**” or “**Maritime Connect**” means the Orange Maritime Connect Satellite Service described in this Service Description.

“**TCP/IP**” means Transmission Control Protocol/Internet Protocol.

“**TDM**” means time-division multiplexing.

“**UTM**” means unified threat management, which is an information security solution where a single security appliance provides multiple security functions.

“**UMTS**” means the Universal Mobile Telecommunications System.

“**VLAN**” means Virtual Local Area Network.

1.2 Overview

The Specific Conditions for Satellite Services and the Specific Conditions for Security Services apply to Maritime Connect. Maritime Connect only provides the features and functionality set forth in this Service Description. Maritime Connect provides network connectivity to movable (e.g. sea-going vessels) and non-movable (e.g. fixed offshore platform) Locations where other network connectivity solutions are inaccessible, highly degraded due to sea conditions, or insufficient for other reasons. Maritime Connect is available for use with any network service; however, if the network service is provided by Orange, it is a separate and billable service and is described in a separate Service Description.

1.3 Standard Service Elements

1.3.1 Service Offerings. The following three (3) service offerings of Maritime Connect are available:

1.3.1.1 Lazer. Lazer, which is the basic, entry level service offering of Maritime Connect, is required to deploy Maritime Connect on board Customer's vessel. The Lazer service offering allows Customer to bundle the following service features (or any other service features approved by Orange in writing) provided by Orange as part of Maritime Connect on a single piece of Satellite Equipment for cost savings:

- (a) **IP Routing.** IP Routing provides the fundamental infrastructure for the delivery of advanced IP-based services across all Orange Network Services used by Customer. Based on Internet Engineering Task Force (“**IETF**”) standards, it offers a broad portfolio of IP routing technologies.
- (b) **Link Switching.** Maritime Connect monitors several links of the network and employs switching access technology to forward traffic through the preferred available link, allowing Customer to switch between links while preserving VPN connectivity.
- (c) **QoS.** QoS provides priority to networks, including dedicated bandwidth, controlled jitter, low latency and improved loss characteristics. Packet classification features provide the capability to partition network traffic into multiple priority levels or classes of service. Classification is signaled to the network elements via a 'tag' included in the IP Precedence/Differentiated Services Code Point (“**DSCP**”). This process is called marking.
- (d) **Firewall.** Maritime Connect provides a firewall that protects the vessel whenever the link is used. When connected to the Internet, the signal will first cross the Orange MPLS Network then go through a second firewall connected between the Orange MPLS Network and the Internet.

- (e) **URL Filtering.** URL filtering blocks unsuitable website and web traffic. It uses two filtering techniques that can be defined per filter profile. In Lazer, the URL filtering blocks only web pages according to the blacklist rule defined by Customer and all web pages that are banned by applicable laws, rules and regulations (e.g. anonymizers, botnets, compromised, malware, network errors, parked domains, phishing, fraudulent, and spam websites, etc.), and the blacklist cannot be modified.
- (f) **Virtual Service Onboard.** Virtual Service Onboard is a platform for introducing virtualization into the vessel and supporting Customer mission-critical business applications. In order to host a Customer virtual machine, Customer will send to Orange an .ova file of its machine, and this machine will be hosted in the Orange server and configured in the VLAN Business as describe in Clause 1.3.5 below.
- (g) **DHCP.** DHCP provides dynamic assignment of IP addresses to devices on a network, which devices may be Maritime Connect Equipment or Satellite Equipment, or devices provided by Customer. With DHCP, computers request IP addresses and networking parameters automatically from a DHCP server, reducing the need for a network administrator to configure these settings manually.
- (h) **Web Optimization.** Web Optimization allows Internet traffic to cache locally. The Web proxy works in a manner that is invisible to users. Web object caching includes all cacheable items delivered via HTTP or HTTPS (warning with certificates), including large downloads like static video on demand ("VoDs"), YouTube video, system updates, or web site graphics.

1.3.1.2 **Glider.** The Glider service offering includes the elements of the Lazer service offering as well as an enhanced application that delivers improved data security with UTM. This service offering provides access to Hotspot management for better connection management on board Customer's vessel, and access to reports concerning the usage of the Maritime Connect Equipment.

- (a) **UTM (Unified Threat Management).** UTM provides easy to use security solutions for industrial endpoint protection, remote services, and WiFi management of varying complexity. The scope of network security provided will change over time in an effort to address new ways of protection needed for changes in mobile connectivity and use.
- (b) **Hotspot Management.** The Hotspot management application is a captive portal solution that can be run over a wireless (or wired) connection and that provides web-based authentication prior to granting network access. Hotspot management can be used to enable secure and quick Internet access to crew members.
- (c) **Network Statistics Reporting.** The Network Statistics reporting interface provides reporting on various aspects of Maritime Connect, which may include statistics (i.e. an overview of the connections grouped by user as well as a summary of the traffic the user made during the connection), active connections (i.e. provides actual active connections on the hotspot), and connection log (i.e. displays the summary of connections showing username, IP address, and connection duration).

1.3.1.3 **Storm.** The Storm service offering includes the elements of the Lazer and Glider service offerings, but also provides advanced integration for UMTS. This service offering provides an intelligent data access roaming solution for Customer's vessel, delivering redundancy. In addition, this service offering includes WiFi on board Customer's vessel, increasing mobility and flexibility and allowing access to Customer's applications and services from smartphones and mobile devices. Subject to Orange's written approval (which will be based on the then-current configuration of the Service and a study of such configuration performed by Orange, which may be subject to additional charges), the Storm service offering may also include wide area network ("WAN") optimization to improve bandwidth management and accelerate network traffic from Customer's vessel.

1.3.2 Service Connectivity

Orange provides four (4) types of connectivity that can be ordered by Customer for each of the service offerings listed in Clause 1.3.1 above:

- (a) **Early Service:** With Early Service, Customer's satellite bandwidth is shared on an In Route and Out Route symmetrical way between multiple Orange customers and multiple Locations. Early Service is offered both on C and Ku band microwave frequencies. The microwave frequency bands are shared between Locations using IP TDMA technology. Early Service is based on the Maritime Connect Equipment switch running at layer-3.
- (b) **Standard+ Service:** With Standard+ Service, Customer's satellite bandwidth is shared on an In Route and O Route symmetrical way between multiple Orange customers and multiple Locations. Standard+ Service is offered both on C and Ku band microwave frequencies. The microwave frequency bands are shared between Locations using IP TDMA technology.
- (c) **Extended Service:** With Extended Service, Orange provides a managed solution that shares satellite capacity on an In Route and Out Route asymmetrical way among Customer's remote Locations and locations of Orange's other customers. Extended Service is offered both on C and Ku band microwave frequencies. The microwave frequency bands are shared between Locations using IP TDMA technology.
- (d) **Premium Service:** With Premium Service, Customer's satellite bandwidth is shared between multiple remote Customer Locations. Customer will notify Orange as to how the bandwidth is to be allocated among the Customer Locations. Premium Service is offered both on C and Ku band microwave frequencies. The microwave frequency bands are shared between Locations using IP TDMA technology.

1.3.3 **Technology.** The Service is provided by Orange on a satellite based TCP/IP network with a star topology (i.e. a single hub Location to one or more remote Locations). A TDM broadcast downstream channel from a central hub Location is shared by a number of remote Locations. The Locations transmit to the hub on shared upstream carriers

using D-TDMA based on dynamic time plan slot assignment generated by the protocol processor. Maritime Connect is provided by Orange from multiple teleports and satellite coverage zones. The asymmetric full duplex transmission is based on:

- (a) TDM in the hub to remote Location direction (outbound, downstream, or forward carrier) based on broadcast;
- (b) D-TDMA in the remote Location to hub direction (inbound, upstream or return carrier);
- (c) Dynamic bandwidth provisioning (bandwidth-on-demand);
- (d) DVB-S2 standard together with ACM;
- (e) TCP acceleration in both directions; and
- (f) QoS control.

The Service also can provide fixed and dedicated capacity for IP applications via a network of two-way satellite terminals that operate in a star configuration.

1.3.4 **Bandwidth.** Bandwidth is made available independently in the hub to remote Location direction (outbound, downstream, or forward carrier) or in the remote Location to hub direction (inbound, upstream, or return carrier) or in both directions at the same time. A bi-directional call between two remote terminals implies the use of bandwidth between terminal-1 and the hub and between the hub and terminal-2, and vice-versa. In such case, twice the amount of satellite capacity is used by a double satellite hop.

1.3.5 **VLAN.** Maritime Connect provides two types of VLANs: VLAN Crew and VLAN Business, allowing Customer to segregate its business and crew activity. VLAN Business is tagged as high priority and VLAN Crew is tagged as low priority. These VLANs are managed by Customer, although Orange (and not Customer) manages vessel security.

1.3.6 **Forward and Return Carrier.** The forward carrier is a TDM-based transmission. The return carrier link is a D-TDMA based transmission. Each Customer network can run with a single or multiple return carrier configuration depending on the network sizing requirements. The return carrier is shared by Customer with other Orange customers.

1.3.7 **Service Features and Functions.** The Service is provided with a range of available forward carrier and return carrier sizes from which Customer may choose. The satellite space segment is shared among Customer's Locations for the same VPN using the Orange Network. Customer may configure the Maritime Connect Locations with dynamic CIR on available bandwidth or with no dynamic CIR. The Locations with dynamic CIR will take priority over other Locations. In addition to the transmission delay associated with satellite access services, contention on the space segment may generate delay variation (i.e. jitter), and an overhead is introduced on the return direction of data (i.e. from the remote to the hub Location), which also will affect transmission. CIR features are provided for the Extended and Premium Service types.

1.4 Optional Service Features

1.4.1 **Validated Service Options.** The following optional service features may be available with Maritime Connect upon the prior written approval of Orange, which will be based on specific tests and validations conducted by Orange and on applicable laws and regulations:

- A contingency option of bundled Satellite Equipment (excluding the antenna notwithstanding that the definition of Satellite Equipment includes antenna), where the primary Satellite Equipment is secured by the secondary indoor unit and outdoor unit when failure occurs on the primary Satellite Equipment;
- Internet access may be configured on a non-satellite connected Location;
- IPSec over the Orange Network;
- Multi VPN;
- ABS permits a movable Location to roam by switching between multiple satellite beams under the following conditions:
 - Each movable Location will be identified by a unique ID.
 - No more than one satellite beam may be active at a time.
 - A specific configuration for each satellite beam is required to allow roaming.
 - Roaming is only possible between beams of the same network management system and is governed by the modem, requires a compatible remote VSAT system (e.g. antenna, low noise block converter, antenna control unit), and remote management access.
- Mission-critical application, which will be defined and approved by both Parties, and any changes thereto may be subject to additional charges; and
- Resiliency service option, which provides an alternative route in case of failure to the primary link to shore. The resiliency option is only available if Customer also purchases an Orange Network Service (which is a separate service described in and subject to a separate Service Description) for use with Maritime Connect, and the resiliency or contingency solution will be described in the Service Description for the relevant Orange Network Service.

The Service options identified in this Clause 1.4.1 are subject to additional Charges.

1.4.2 **Voice Pre-Paid Service Option.** With the Voice Pre-Paid optional service feature, each User will have a personal, individualized PIN allowing access to the Voice Pre-Paid Service Option platform. Customer is responsible for ordering the PINs for its Users and allocating them accordingly. Each User may prepay a credit in an amount of

his/her choosing to be used with the Voice Pre-Paid Service Option. Each minute will be charged against the credit according to the destination of the User's call. Users will be able to determine via an IVR feature what the amount of his/her credit is remaining and, if desired, to refill the time credit. Unless prohibited by law or regulation, Users may place calls to anywhere in the world, regardless of the location or itinerary of the vessel.

Additional Charges apply to the Voice Pre-Paid Service Option. Charges include a one-time, pre-paid charge, and Charges per minute will vary depending on the destination of the call. Users will pre-pay in the form of a credit as much or as little as they desire.

Orange will cancel without notice any PIN that is not used at least once during a rolling 12-month period.

- 1.4.3 **Voice Post-Paid Service Option.** With the Voice Post-Paid optional service feature, each User will have a personal, individualized password allowing access to the Voice Post-Paid Service Option platform. Customer is responsible for ordering the passwords for its Users and allocating them accordingly. Each minute will be charged according to the destination of the User's call. Unless prohibited by law or regulation, Users may place calls to anywhere in the world, regardless of the location or itinerary of the vessel.

Additional Charges apply to the Voice Post-Paid Service Option. Charges include a one-time charge, and Charges per minute will vary depending on the destination of the call. For the avoidance of doubt, Customer will pay all Charges for the Voice Post-Paid Service Option, including per-minute usage Charges.

- 1.4.4 **Cold Stack Option.** The Cold Stack Option is available when a vessel needs to be in "stack" (a/k/a "lay-up") for a period of time for maintenance, repairs, or to reduce operating costs. Orange provides this option only during "cold stack" (i.e. a vessel that has been laid up with little or no crew and no machinery operating, but which may have either a temporary on-deck generator or otherwise is connected to on-shore power through external cables). Customer may exercise this option only for a cold stack period of six (6) consecutive months or less in any consecutive 12 month period. Unless as otherwise prohibited by the Agreement, the Service Term of the relevant Order for this Service will be extended for the duration of time that a vessel is in cold stack.

- 1.4.4.1 **Features.** In order to exercise this option, Maritime Connect must be, and remain installed in at least five (5) Customer vessels during the time that Orange provides the Cold Stack Option. No more than 20% of Customer's vessels may exercise this option at any given time. The Cold Stack Option is not available at any time at Customer's discretion; instead, Customer may order this option only on or before the commencement date of the Service Term of the relevant Order for the Maritime Connect associated with the vessel and for which Customer wants to have this option available for such vessel. Then, the Cold Stack Option may be exercised by Customer during the Service Term, subject to the terms and conditions set forth herein, by providing Orange with at least fifteen (15) days' advance written notice prior to the commencement date of the cold stack period. Customer must specify in its written notice the duration of the cold stack period strictly in accordance herewith. Proactive monitoring of Maritime Connect is not available to Customer during the cold stack period.

- 1.4.4.2 **Charges.** In addition to the monthly recurring Charges for the Service (which are comprised of the Charges for the satellite space segment and the Charges for the Satellite Equipment), Customer shall pay to Orange a monthly recurring Charge in the amount of \$150 for the Cold Stack Option during the Service Term (including during the cold stack period) of the Maritime Connect Service. An additional one-time Charge in the amount of \$200 applies for the activation of the Cold Stack Option, and an additional one-time Charge in the amount of \$200 applies for the deactivation of the Cold Stack Option. Also:

- (a) For a cold stack period of up to 3 months, Customer shall pay to Orange for each month during the cold stack period an amount equal to 3% of the monthly recurring Charge for the portion of the Service that is applicable to the satellite space segment. Such additional 3% monthly recurring satellite space segment Charge will cease to apply after the cold stack period.
- (b) For a cold stack period of 3 to 6 months, Customer shall pay to Orange for each month during the cold stack period an amount equal to 6% of the monthly recurring Charge for the portion of the Service that is applicable to the satellite space segment. Such additional 6% monthly recurring satellite space segment Charge will cease to apply after the cold stack period.

- 1.4.5 **Infotainment Services Option.** Each User will have a personal, individualized user account allowing access to the Maritime Connect Infotainment platform. Customer is responsible for ordering the user account for each of its Users and allocating them accordingly. All content available as part of the Maritime Connect Infotainment Services Option is included in the Service. Additional Charges apply to the Maritime Connect Infotainment Service Option. Charges consist of a one-time charge and monthly recurring charges. The monthly recurring Charges will be based on, and may vary depending on, the number of Customer's user accounts.

1.5 Security

The Satellite Equipment includes an embedded encryption chip (e.g. 256 encryption), which may be activated only upon Customer's request and subject to additional monthly recurring Charges. Notwithstanding the foregoing, however:

NEITHER ORANGE NOR ITS THIRD-PARTY SUPPLIERS WARRANT OR GUARANTEE THE SECURITY OF CUSTOMER'S SATELLITE TRANSMISSIONS USING THE ENCRYPTION CHIP OR OTHERWISE. CUSTOMER ACKNOWLEDGES THAT UNAUTHORIZED INTERCEPTION OF SATELLITE TRANSMISSIONS MAY OCCUR AND ORANGE WILL NOT BE LIABLE FOR ANY SUCH INTERCEPTION OR OTHER BREACH OF SECURITY RELATING TO ANY SATELLITE TRANSMISSION. CUSTOMER WILL BE SOLELY RESPONSIBLE FOR ITS OWN NETWORK SECURITY POLICY AND SECURITY VIOLATION RESPONSE PROCEDURES.

1.6 Acceptance Testing

Upon completion of the physical installation of Maritime Connect, Orange will commence acceptance testing to confirm that all aspects of the Service are operational.

END OF SERVICE DESCRIPTION FOR EASY GO NETWORK SERVICE